CLAIMS:

We claim:

1. A method for determining the cause of a malady in an animal comprising:

providing a sample from the animal;

providing a test device comprising a plurality of integrated, discrete test sites wherein the plurality of discrete test sites comprises a first discrete test site that comprises a first binder that binds to a first analyte selected from any of groups (i) – (v), wherein group (i) a bacteria or a substance produced by an animal in response to a bacterial infection, group (ii) a virus or a substance produced by an animal in response to a viral infection, group (iii) a fungus and or a substance produced by an animal in response to a fungal infection, group (iv) a protozoa and a substance produced by an animal in response to a protazoan infection and group (v) a substance produced by an animal in response to an allergic reaction, and the plurality of test sites comprises a second discrete test site that comprises a second binder that binds to a second analyte and wherein the second analyte is a different than the first analyte;

introducing the sample to the device wherein the sample contacts the plurality of integrated, discrete test sites;

and evaluating the plurality of integrated, discrete test sites for a change indicating binding of analyte.

2. The method of Claim 1, wherein the second analyte that is selected from a different group than the first analyte.

3. The method of Claim 2, wherein the first analyte is selected from group (i) and the second analyte selected from group (ii), group (iii), group (iv) or group (v).

4. The method of Claim 3, wherein the second analyte is selected from group (v).

5. The method of Claim 3, wherein the second analyte is selected from group (iv).

6. The method of Claim 3, wherein the second analyte is selected from group (ii).

7. The method of Claim 3, wherein the second analyte is selected from group (iii).

8. The method of Claim 2, wherein the first analyte is selected from group (ii) and the second analyte is selected from group (iii).

9. The method of Claim 2, wherein the first analyte is selected from group (ii) and the second analyte is selected from group (v).

10. The method of Claim 2, wherein the first analyte is selected from group (iii) and the second analyte is selected from group (v).

11. The method of Claim 1, wherein evaluating the first test site and the second test site for a change indicating that binding has occurred comprises observing light that has been reflected from or transmitted through the first test site for diffraction and observing light that has been reflected from or transmitted through the second test site for diffraction.

12. The method of Claim 1, wherein the animal is a mammal.

13. The method of Claim 12, wherein the mammal is a human.

14. The method of Claim 1, further comprising contacting the sample to a third discrete test site wherein the third discrete test site comprises a third binder that binds to a third analyte selected from any of groups (i) – (v).

15. The method of Claim 14, further comprising contacting the sample to a fourth discrete test site wherein the fourth discrete test site comprises a fourth binder that binds a fourth analyte selected from any of groups (i) – (v).

16. The method of Claim 1, wherein the test device is a hand-held test device.

17. A diffraction-based diagnostic method for differentiating the causes of a respiratory infection in a human comprising:

providing a fluidic sample from a human;

providing a test device comprising a first discrete test site and a second discrete test site wherein the first discrete test site comprises a first binder that is selected to bind to a first analyte selected from any of groups (i) – (v): group (i) a bacteria or a substance produced by a human in response to a bacterial infection, group (ii) a virus or a substance produced by a human in response to a viral infection, group (iii) a fungi or a substance produced by a human in response to a fungal infection, group (iv) a protozoa or a substance produced by a human in response to a protozoan infection and group (v) an allergen or a substance produced by a human in response to an allergic reaction, and the second discrete test comprises a second binder that binds a second analyte and wherein the second analyte is different than the first analyte;

introducing the sample to the device wherein at least a portion of the sample contacts the first test site and the second test site;

directing light at the first test site and the second test site; and

evaluating light reflected from or transmitted through the first test site for diffraction indicating that binding has occurred at the first test site and evaluating light reflected from or transmitted through the second test site for a change indicating that binding has occurred at the second test site.

18. The method of Claim 17, wherein the second analyte is selected from groups (i) – (iv).

19. The method of Claim 18, wherein the second analyte is selected from a group that is a different group than the first analyte.

20. The method of Claim 19, wherein the first analyte is selected from group (i) and the second analyte is selected from group (ii), group (iii), group (iv) or group (v).

21. The method of Claim 20, wherein the second analyte is selected from group (v).

22. The method of Claim 20, wherein the first binder is an antibody to C-reactive protein or an antibody to neutrophil lipocalins.

23. The method of Claim 21, wherein the second binder is an allergen, an allergen extract or an antibody to IgE.

24. The method of Claim 17, wherein the first binder or the second binder is an allergen, an allergen extract or an antibody to IgE.

25. The method of Claim 17, wherein the first binder or the second binder is sialic acid or an antibody to influenza.

26. The method of Claim 17, wherein the first binder or the second binder is an antibody to *Aspergillus*.

27. The method of Claim 20, wherein the second analyte is selected from group (ii).

28. The method of Claim 20, wherein the second analyte is selected from group (iii).

29. The method of Claim 19, wherein the first analyte is selected from group (ii) and the second analyte is selected from group (iii).

30. The method of Claim 19, wherein the first analyte is selected from group (ii) and the second analyte is selected from group (v).

31. The method of Claim 19, wherein the first analyte is selected from group (iii) and the second analyte is selected from group (v).

32. The method of Claim 19, further comprising directing a sample to a third discrete test site wherein the third discrete test site comprises a third binder

that is adapted to bind to a third analyte selected from any of groups (i) – (v), directing light at the third test site and evaluating light reflected from or transmitted through the third test site for diffraction indicating that a change indicating that binding has occurred at the third test site.

33. The method of Claim 32, further comprising directing a sample to a fourth discrete site wherein the fourth discrete test site comprises a fourth binder that is adapted to bind to a fourth analyte selected from any of groups (i) – (v) and evaluating the fourth test site for a change indicating that binding has occurred at the fourth test site.

34. The method of Claim 17, wherein the test device is a hand-held device.

35. A device for determining the presence of analytes in a sample comprising:

a surface comprising a first discrete test site wherein the first discrete test site comprises a first binder that is adapted to bind to at least one first analyte selected from any of groups (i) – (v): group (i) a bacteria or a substance produced by an animal in response to a bacterial infection, group (ii) a virus and or a substance produced by an animal in response to a viral infection, group (iii) a fungus or substances produce by an animal in response to a fungal infection, group (iv) a protozoa or a substance produced by an animal in response to a protozoan infection and group (v) a substance produced by an animal in response to an allergic reaction, and a second discrete test comprising a second binder that is adapted to bind at least one second analyte selected from any of groups (i) – (v) and that is a different binder than the first binder.

36. The device of Claim 35, wherein the at least one second analyte that is selected from any of groups (i) – (iv) and is different from the group of the first analyte.

37. The device of Claim 36, wherein the first analyte is selected from group (i) and the second analyte is selected from group (ii), group (iii), group (iv) or group (v).

38. The device of Claim 37, wherein the second analyte is selected from group (v).

39. The device of Claim 37, wherein the first binder is an antibody to C-reactive protein or an antibody to neutrophil lipocalins.

40. The device of Claim 38, wherein the second binder is an allergen, an allergen extract or an antibody to IgE.

41. The device of Claim 35, wherein the first binder or the second binder is an allergen, an allergen extract or an antibody to IgE.

42. The device of Claim 35, wherein the first binder or the second binder is sialic acid or an antibody to influenza.

43. The device of Claim 35, wherein the first binder or the second binder is an antibody to *Aspergillus*.

44. The device of Claim 35, further comprising a guide that directs at least a portion of the sample to the first discrete test site and to the second discrete test site.

45. The device of Claim 35, further comprising a third discrete test site wherein the third discrete test site comprises a third binder that is adapted to bind to a third analyte and wherein the third analyte is different than both the first analyte and the second analyte.

46. The device of Claim 45, further comprising a fourth discrete site wherein the fourth discrete test site comprises a fourth binder that is adapted to bind to a fourth analyte and wherein the fourth analyte is different than the first analyte, the second analyte and the third analyte.

47. The device of Claim 35, wherein the device is a hand-held device.

48. The device of Claim 35, wherein the first binder is printed in a defined pattern on a substrate and the second binder is printed in a defined pattern on the substrate.

49. The device of Claim 35, further comprising diffraction enhancing elements.

50. The device of Claim 35, further comprising a wicking agent.

51. A device for determining the cause of a malady in an animal comprising:

a test device comprising discrete first and second test sites and wherein said first and second test sites are integral to said test device,

said first test site comprises a first binder that to binds to an analyte selected from the group consisting of bacteria, substances produced by an animal in response to a bacterial infection, viruses, substances produced by an animal in response to a viral infection, fungi, substances produced by an animal in response to a fungal infection, protozoa, substances produced by an animal in response to a protozoan infection, allergens and substances produced by a animal in response to an allergic reaction; and

said second test site comprises a second binder that binds to a different analyte than the first binder.

52. The device of claim 51 wherein said first binder binds to analytes selected from the group consisting of bacteria and substances produced by an animal in response to a bacterial infection.

53. The device of claim 51 wherein said first binder binds to analytes selected from the group consisting of bacteria and substances produced by an animal in response to a bacterial infection and further wherein said second binder binds to analytes selected from the group consisting of allergens and substances produced by a an animal in response to an allergic reaction.

54. The device of claim 53 wherein the test device further comprises a third test site and wherein said third test site comprises a third binder that binds to analytes selected from

the group consisting of viruses and substances produced by an animal in response to a viral infection.

55. The device of claim 51 wherein said first binder binds to analytes selected from the group consisting of bacteria and substances produced by an animal in response to a bacterial infection, and further wherein said second binder binds to analytes selected from the group consisting of viruses and substances produced by an animal in response to a viral infection.

56. The device of claim 51 wherein said first binder binds to analytes selected from the group consisting of bacteria and substances produced by an animal in response to a bacterial infection, and further wherein said second binder binds to analytes selected from the group consisting of fungi and substances produced by an animal in response to a fungal infection.

57. The device of claim 56 wherein the test device further comprises a third test site and wherein said third test site comprises a third binder that binds to analytes selected from the group consisting of protozoa and substances produced by an animal in response to a protozoan infection.

58. The device of claim 51 further comprising a conduit for directing sample to said test sites.

59. The device of claim 58 further comprising a sample port and wherein said sample port is in fluid communication with said conduit.